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Likely Outcomes in the National Debate over Greenhouse Gas Emissions

-a public policy analysis

Maureen Coyle

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"quote about businesses reducing

emissions by 5%

Abstract

In 2005, the Convention on Climate Change took many conceptual ideas regarding greenhouse gas emissions, best practices, and national environmental policies and committed the 192 member countries to legislation known as the Kyoto Protocol. The United States signed this protocol but it was not ratified, and therefore the United States need not and has not, been bound to the protocol. However, the new administration, under President Barack Obama, promises the United States is now ready to assume leadership in tackling climate change.

In December of this year, the United Nations Climate Change Conference will take place in Copenhagen, Denmark to draft a new Kyoto Protocol. In order for the United States to fulfill its promise of assuming leadership, it will need to demonstrate federal effort to battle climate change. The question arises, what will the administration do to battle climate change and how will it affect politics, corporations, and consumers?

The aim of my project is to forecast the likely outcomes of greenhouse gas regulation by using the MacRae and Wilde policy analysis process. My project focuses on comparing and analyzing a cap and trade method vs. implementing a carbon tax or command and control approach. Methods of my research include investigating proposed legislation, lobbying groups, non-profit organizations, and current events and articles. This project focuses heavily on personal interviews with experts in the field of greenhouse gas regulation.

Keywords: Greenhouse Gas Regulation, Climate Change, Cap and Trade

I. Define the Problem

The Industrial Revolution, sparked by the invention of the steam engine and a society of innovators, is responsible for the wealth, advancement, and prosperity of society as a whole. Prior to this revolution, most of the world lived in extreme poverty and struggled to meet basic needs of nutrition, health, education, and the ability to advance in one's life and community. However, while the Industrial Revolution of the 18th century was paramount in the advancement of society it was quite opposite with regards to the environment. The Earth's climate has always undergone periods of climate change through ice ages, long periods of warmth, volcanic eruptions etc. However, these changes were always natural, that is until the Industrial Revolution. Since the revolution, the combination of burning fossil fuels such as coal and oil as well as deforestation have caused greenhouse gases to increase significantly in the atmosphere.

Greenhouse gases, when increased, will cause the Earth's temperate to climb. According to NOAA (National Oceanic and Atmospheric Administration) and NASA data, the eight warmest years on record (since 1850) have occurred since 1998. Climate models predict that if greenhouse gases continue to increase, the average temperate at the Earth's surface could increase up to 7.2 degrees Fahrenheit above 1990 levels by the end of this century (EPA.gov). The effects of climate change include sea level rise, shrinking glaciers, thawing of permafrost, and vegetation and animal distribution problems (EPA.gov). "Many elements of human society and the environment are sensitive to climate variability and change. Human health, agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are examples of climate-sensitive systems" (EPA.gov). One of the most significant and specific examples of greenhouse gases that have increased is carbon. The concentration of carbon dioxide has increased 36% over modern pre-industrial levels (Loa).

II. Determine Criteria

Climate change has progressed steadily from a once nationally debated issue to recently a confirmed problem and hazard to humanity. On March 21, 1994, the Convention on Climate Change met with 192 countries in attendance, a near universal membership. Under this convention, countries were able to gather and share information on greenhouse gas emissions, best practices, and national policies. Strategy, impact, support, and cooperation were key elements in preparing to adapt to the impacts of climate change. In 2005, the committee created the Kyoto Protocol which took many of the concepts the committee encouraged and committed them via legislation. Under the treaty are such mechanisms as emissions trading, clean development and joint implementation. The United States signed this protocol, however, it was not ratified and the U.S. has not bound to the protocol. Consequently, the United States has come under fire with many European nations and global leaders that are not pleased with the United States efforts to stop global warming. However, the new administration, under President Barack Obama, promises the United States is now ready to assume leadership in tackling climate change.

In December of this year, the United Nations Climate Change Conference will take place in Copenhagen, Denmark to draft a new Kyoto Protocol. Many participating nations have made sound efforts in battling greenhouse gas regulation. However, the United States has failed to do so from a federal level and has fallen behind in its responsibilities as a world leader.

With the upcoming meeting in Copenhagen, the United States has a chance to bring substantial evidence that they are serious about greenhouse gas regulation and climate change. Mandatory greenhouse gas regulation will affect corporations, consumers, and politics. While an increasing majority of analysts agree that regulation must and will happen, the method in which it should happen is greatly debated. Currently there are three main routes that the United States could take with regards to greenhouse gas regulation. The first, a command and control regulatory approach, has received a lot of attention as the EPA has just recently acknowledged its authority, under the Clean Air Act of 2007, to regulate greenhouse gas emissions using a command and control approach. Furthermore, the American Clean Energy and Security Act of 2009, has recently come before Congress and contains a proposal for a national cap and trade program for the United States. Finally, America's Energy Security Trust Fund Act of 2009 is also before Congress and presents a carbon tax proposal.

This policy analysis will focus on each method and determine the desirable and undesirable outcomes of each method with regards to the market as well as the environment. Policy goals, key stakeholders, administrative ease, costs and benefits, effectiveness and legality will also be measured for each method. Finally, this project will compare and contrast the political acceptability of each method. By doing so, a clear prediction of the likely outcomes in the national debate over greenhouse gas regulation will be presented.

III. EPA Regulation

On April 22, 2009, the Environmental Protection Agency declared that carbon dioxide and five other industrial emissions threaten the planet, health, and welfare of current and future generations. This recognition is, "the first formal recognition by the U.S. government of the threats posed by climate change," EPA Administrator Lisa Jackson wrote in a memo to her staff (Weisman).

The Supreme Court has ruled that the EPA has the authority to regulate under the Clean Air Act of 2007. The EPA is now acknowledging this authority and leveraging it to push Congress towards making a legislative solution. Rep. Markey, co-author of the recently proposed American Clean Energy and Security Act of 2009, said the EPA's decision was a "game changer." "It's now no longer a choice between doing a bill or doing nothing," said the lawmaker, who will hold four days of climate change hearings next week before the formal drafting of a bill begins the last week of April. "It is now a choice between regulation and legislation" (Weisman).

If the EPA were to regulate greenhouse has emissions, they would simply force businesses to reduce. A committee of bureaucrats from the EPA could raise fuelefficiency standards for automobiles, adopt California's rules for greenhouse-gas tailpipe emissions, require auto makers to produce more hybrid and electric vehicles, and force new power plants to include emissions-reduction technology. Furthermore, the EPA could order old power plans to have more efficient boilers, and mandate reliance on renewable energy (Weisman).

Many businesses are extremely concerned with the concept of EPA regulation. Companies will lose the flexibility of more free-market based ideas such as a cap and trade or carbon tax. They, as well as many political players, much prefer that Congress pass legislation on the matter. "We're pretty confident that Congress is going to be much more sensitive to the economic impact of this than some unelected bureaucrats," said Hank Cox, a spokesman for the National Association of Manufacturers" (Weisman).

The EPA's actions are most likely going to put pressure on the US Congress to create legislation. With this pressure, they are able to say that if Congress does not do something in the near future, the EPA will. This wake up call for national policy solutions is a good first step towards the U.S assuming the leadership role in curbing greenhouse gas emissions that it has promised.

EPA administrator Lisa Jackson says that, "This pollution problem has a solutionone that will create millions of green jobs and end our country's dependence on foreign oil" (U.S. EPA). Both she and the executive administration have repeatedly said they prefer legislation over regulation to address climate change. U.S. Senator Barbara Boxer, chair of the Senate Committee on Environment and Public Works, said that the EPA's finding is long overdue and that this allows the government to cut greenhouse gas emissions right now. However, she also said that, "the best and most flexible way to deal with this serious problem is to enact a market based cap-and-trade system which will help us make the transition to clean energy and will bring us innovation and strong economic growth" (U.S. EPA)

IV. Cap and Trade

A cap and trade method of regulating greenhouse gas emissions is based heavily on creating a market that provides economic incentives for receiving reductions in greenhouse emissions in a cost effective manner. Carbon is most often discussed with regards to a cap and trade because carbon acts globally, meaning its impact on the environment is generally similar wherever it is released. The main concept is that those who are emitting higher levels of carbon are paying a charge for polluting while those who are reducing their carbon are able to profit and are rewarded.

The cap works by requiring companies to have an emissions permit for every ton of carbon dioxide it releases into the atmosphere. Only a certain number of permits are issued to each company, effectively setting a cap on the amount of greenhouse gas pollution a company is allowed to emit. Over time, the limits become stricter until goals are met. "Emissions permits in the near term would likely fall in the range of \$10 to \$15 per metric ton of carbon dioxide or its equivalent" (Neurohr). Those companies with more efficient sustainability practices, who emit less than their allowance, can sell their unused permits to other companies. As the Center for American Progress states, "This creates a system that guarantees a set level of overall reductions, while rewarding the most efficient companies and ensuring that the cap can be met at the lowest possible cost to the economy" (Neurohr).

A national cap-and-trade system would require the creation of new administrative and legal trading infrastructure whereas other methods, such as a carbon tax, already have the infrastructure intact. This new infrastructure would require regulations, third party verifications, enforcing institutions and electronic registry of permits. "To promote transparency and objectivity, an independent advisory panel will be needed to recommend adjustments based on new scientific evidence; assess economic impacts; and determine the effectiveness of the cap in meeting GHG emissions targets (A Carbon Tax).

The goal of a cap and trade is to create a market that can reduce carbon dioxide emissions in a cost-effective and efficient matter. Most cap and trade systems aim to limit the rise in global temperature so that it is similar to pre-industrial revolution numbers. This would mean approximately 3.6 Fahrenheit above pre-industrial levels. To achieve this, the United States would need to reduce emissions to 80 percent below 1990 levels by 2050 (Neurohr).

In theory, this will cause companies to look for ways to reduce emissions in hopes of falling below their cap and profiting from the trading of carbon credits. "If the federal government auctions the emissions permits to the companies required to reduce their emissions, it would create a large and dependable revenue stream. These financial resources could be used to achieve critical public policy objectives related to climate change mitigation and economic development." "Initial estimates by the Congressional Budget Office project that an economy-wide cap-and-trade program would generate at least \$50 billion per year, but could reach up to \$300 billion" (Neurohr). In theory, this money could be used to offset price increases, invest in renewable energy and transportation, etc.

A cap and trade system is based on a "user pays principle." This means that polluters pay while more efficient companies do not and can potentially profit from their efficiency. Polluters, now considering the cost of pollution, would hopefully stimulate innovation and reduction strategies. One concern of a cap and trade system is that it would initially cause price increases for the consumer. However, while these increases would initially harm the consumer, it could reduce demand for environmentally harmful products giving greener options and increased demand and therefore lower their prices.

Another advantage of a carbon cap and trade program is that models exist in other nations as well as within the United States. Current cap-and-trade programs include the European Union Emissions Trading Scheme as well as a sulfur dioxide cap and trade system in the U.S. The EUETS regulates CO2 emissions from the energy sector, mineral industry, paper and board industry, and iron and steel production and processing. The United States focuses its SO2 cap and trade on electrical utilities. Both of these systems can provide models for a CO2 U.S. cap and trade system. In both nations, emissions permits were given for free at the onset of the program to encourage trade and support. These valuable assets increase revenue and profit and are a key reason as to why industry prefers a cap-and-trade. However, it must be noted that the current administration does not want emissions permits given for free at any point.

Under Obama's current stimulus bill, each ton of emissions reduced would costs somewhere between \$69 and \$137. Under a cap and trade, the price would be less than \$15 to begin with. (Cap).

A United States cap and trade system faces a lot of critique/skepticism with regards to jobs, trade, consumer taxes, price certainty, and implementation. If accurate, these concerns would greatly hinder the goal of a cap and trade program which is to reduce emissions.

A major concern of the United States is that a cap and trade program would harm the United States economy, specifically with regards to jobs and trade. A cap and trade system would raise the domestic manufacturing costs, causing the American economy to experience a substantial outsourcing of manufacturing jobs to nations with lower energy costs and nations that do not impose similar restrictions (Lieberman). A similar situation would be created with regards to trade as increased prices of goods could cause the United States to have a disadvantage when trading with other nations that do not impose such restrictions and therefore will not have experienced an increase in price of goods. One option is to require special international emissions permits for countries that do not have comparable policy actions. This will ensure that the added greenhouse gas emissions price will cover all energy-intensive goals. However, this raises many issues with the World Trade Organization and would require new legislation to legalize such matters.

Critics of the cap and trade system are also concerned that a cap and trade system is really just a tax that will fall on the American people in the way of higher prices. The Congressional Budget Office estimates that households in the bottom income quintile would pay about \$680, not including the costs of reduced employment and output. The three middle quintiles would see cuts between \$880 and \$1,500 (WSJ). Hidden prices also come from the cost of transactions which are higher as compared to other methods such as a carbon tax. The requirements to implement a cap and trade system include building a new institutional infrastructure, tracking/administrative system, and methods of enforcement for noncompliance (A Carbon). For consumers, cap and trade means more expensive gasoline and electricity." Higher costs of goods would not only hurt consumers but would also hurt the United States' competitiveness with regards to international trade. Cap and trade bills are nothing short of a government re-engineering of the American economy. With its aggressive targets to reduce emissions from fossil fuel use, would put the nation on a path of serious economic harm not justified by any benefits" (Lieberman).

Emissions permits also cause a problem with regards to price uncertainty. This would make business planning difficult as emissions permits can be unstable and unpredictable. Finally, if a cap and trade system were implemented it is predicted that companies would likely report their carbon footprints as being proportionately higher than they actually are. If this is the case, when they are "reducing their footprint" they might actually just be profiting from a falsely set target. Many believe that polluters will maximize their emission before the cap-and-trade system goes into effect, "in order to "earn" those pollution rights. In fact, the voluntary carbon cap-and-trade system currently operating has already been criticized for questionable offsets that have produced huge profits but little environmental benefit (Bradsher).

Deleted:

In April 2009, Congress proposed The American Clean Energy and Security Act of 2009. The legislation states it will, "create millions of new clean energy jobs, save consumers hundreds of billions of dollars in energy costs, enhance America's energy independence, and cut global warming" (Waxman).

This draft has four titles; clean energy, energy efficiency, global warming, and a "transitioning" title. Within clean energy, the draft promotes renewable sources of energy and carbon capture and sequestration technologies, low carbon- transportation fuels, clean electric vehicles, and the smart grid and electricity transmission." Under "energy efficiency", the plan will increase energy efficiency across all sectors of the economy, including buildings, appliances, transportation and industry. A "global warming" title places limits on emissions of heat-trapping pollutants, and a "transitioning" title that protects the U.S. consumers and industry and promotes green jobs during the transition of clean energy (Waxman). However, the draft does not deal with how to allocate the tradable emissions (cap and trade) The committee plans to address this issue through discussions amongst members.

Specifically under the "Global Warming Pollution Reduction Program," a marketbased program is established to reduce global warming from electric utilities, oil companies, large industrial sources, and other covered entities that collectively are responsible for 85% of U.S. global warming emissions. Under this program, covered entities must have tradable federal permits called "allowances" for each ton of pollution emitted into the atmosphere. Entities that emit less than 25,000 tons per year of CO2 equivalent are not covered by this program. The program reduces the number of available allowances issued each year to ensure that aggregate emissions from the covered entities are reduced by 3% below 2005 levels in 2012, 20% below 2005 levels in 2020, 42% below 2005 levels in 2030, and 83% below 2005 levels in 2050 (Waxman).

"The draft allows covered entities to increase their emissions above their allowances if they can obtain "offsetting" reductions at lower costs from other sources. The total quantity of offsets allowed in any year cannot exceed 2 billion tons, split evenly between domestic and international offsets. Covered entities using offsets must submit five tons of offset credits for every four tons of emissions being offset" (Waxman).

V. Carbon Tax

A carbon tax requires the government to impose a tax on carbon output and continually raise the price of energy created from fossil fuels (Redburn). Coal would be most affected and experience the most significant price increase while oil such as gasoline and jet fuel would face moderate increases, and natural gas would face the least increases. Natural Gas emits the least amount of CO2 of any fossil fuel, oil products are middle range, and coal burns the most. "Generally, a BTU from coal produces 30% more carbon dioxide than a BTU from oil, and 80% more than from natural gas." A carbon tax would be paid "upstream" meaning at the point from where fuels are extracted from the

Earth and put into the stream of commerce. Furthermore, a carbon tax could only be used for products in which carbon is burned (plastic includes carbon but is not burned, and therefore should not be taxed). The money raised by the tax could be used to offset other taxes (What's A).

Rep. John Larson, Connecticut Democrat and the fourth-ranked Democrat in the House leadership, has recently proposed America's Energy Security Trust Fund Act of 2009. "The legislation would impose a tax of \$15 per metric ton of carbon emissions at the source, and that price would increase by \$10 every year thereafter. If, after five years, that isn't enough to get the country on the path to cut emissions 80 percent from 2005 levels by 2050, then the tax rate could rise \$15 per year" (Sheppard). Over the first decade, 96 percent of revenue generated would be refunded to taxpayers via payroll-tax rebates, with the remainder going to clean-energy tax breaks and transition assistance for workers in carbon-intensive industries.

The goal of a carbon tax is to reduce greenhouse gas emissions to pre-industrial amounts. A carbon tax aims to provide understandable and incentive based mindfulness for consumers who will be able to make more energy efficient choices as well as businesses who can chose design, investment, facilities locations, and land use and taxation.

A carbon tax is preferred to a cap and trade system for many reasons. Carbon taxes can be revenue-neutral, have price predictability, existing infrastructure and implementation methods, and are easier to understand. Furthermore, a carbon tax places more choice in the consumer's hands. They are able, with easier understanding, to choose products, utilities, and vehicles with a lesser carbon tax.

For a carbon tax to work and be politically acceptable, it must be revenue-neutral. This means that the government would retain minimal funds and the majority of revenue would be returned to the public. Revenues could be used to offset payrolls and income taxes. By returning the carbon tax revenues to the public, the carbon tax stands a chance at political acceptability, "Returning the carbon tax revenues to the public would also make it easier to raise the tax level over time (Carbon Tax).

A major benefit to a carbon tax is that the price is predictable. "Making the price predictable is the most significant move you can make to control global warming," says Charles Komanoff, a long-time environmental economist who has recently started the <u>Carbon Tax Center</u> as an advocacy group. "It would tilt literally billions of energy critical decisions toward using less carbon" (Carbon Tax). A carbon tax also has price predictability unlike a cap and trade program which will, "exacerbate the volatility of energy prices since the price of carbon allowances will fluctuate as weather and economic factors affect the demand for energy (Carbon Tax).

Unlike a cap and trade program, a taxing infrastructure already exists in the United States and would therefore allow a carbon tax to be implemented much sooner and easier. Instead of spending the years that would be necessary to build a market for carbon emissions, a carbon tax could immediately begin solving the problem of pollution and climate change. Tax supporters, including former Vice President Al Gore and NASA climate scientist James Hansen, have questioned the complexity of a cap-and-trade plan, saying a carbon tax is much simpler, would make it easier for businesses to factor in increased costs and still reduce greenhouse gasses (LoBianco).

Businesses such as ExxonMobil, are calling for a carbon tax instead of a trading plan (LoBianco). Furthermore, many CEO's including Fed Ex CEO agree with a carbon tax, "It's straightforward. It's clear. It's directly related to the sin, which is the production of CO2, the burning of carbon," he continued. "I agree very much with former vice president Al Gore, who said, 'Tax carbon, which you don't want to have, and reward work, which you do want to have.' Tax carbon and reduce the payroll tax" (Handley).

John Larson, who proposed America's Energy Security Trust Fund Act of 2009 believes that "Unlike a cap-and-trade system, my carbon tax would create no complex new bureaucracies or complicated auction schemes. He further explains that with our current economic crisis, a carbon tax would be easier to implement and wouldn't require a new bureaucracy to manage it. "Having just been through another bubble, are we about to create yet another bubble?" asked Larson. "I think now more than ever the country wants to see something that's transparent. They want to be leveled with" (Congressman).

Larson accounts for the fact that taxing has such a negative connotation. However, be believes that when it is discussed in terms of lowering payroll taxes and offering tax breaks, it has and will continue to gain support. Another problem with a carbon tax is the potential effects it could have on American competitiveness/industry. These issues would stem from problems similar to those faced with a cap and trade system in which price increases could harm the United State's competitiveness with regards to trade and jobs. Nations that did not submit to these standards would have lower price and could be utilized by companies. "That sounds great in the abstract. But the core constituencies of the Democratic Party, including the United Auto Workers, the United Mine Workers, and many other industrial unions whose jobs could be driven to India or China, might not have such a sanguine attitude if they thoroughly analyzed the consequences of the U.S. government unilaterally increasing the cost of carbon-based fuels in any significant way. If the carbon tax defenders argue that the increase need not be dramatic, the question would arise of how much behavior modification would result from a modest increase. If you want to affect behavior, you have to change the costs and the incentives dramatically" (American Machinist)

The most extreme and perhaps fatal problem behind the carbon tax is the political acceptability that is unlikely due to the word "tax." Passing legislation will be extremely difficult as a majority of opinion sides with not being taxed. "Most economists believe a carbon tax (a tax on the quantity of CO2 emitted when using energy) would be a superior policy alternative to an emissions-trading regime," write Kenneth P. Green, Steven F. Hayward and Kevin A. Hassett, three economists at the conservative American Enterprise Institute in Washington. "The irony is that there is a broad consensus in favor of a carbon tax everywhere but on Capitol Hill, where the "T" word is anathema " (Redburn).

Perhaps if it were called a "Climate Impact Fee" or a "Global Warming Prevention Cost", it might be more acceptable. However, the simple word "tax" causes many problems for those in favor of a carbon taxing plan.

VI. Likely Outcomes

Climate Change, Greenhouse Gases, and Global Warming have become familiar concepts to most of society. These phrases, once debated, are now confirmed to be accurate and dangerous to human health and the environment. The December Copenhagen meeting will be a time for the United States to assume leadership in fighting climate change. It has promised to do so and must show its commitment by having passed a federal method of regulation. This method will likely be a cap and trade program.

The EPA, while authorized to regulate, prefers a cap and trade method of regulation and is using their authority to push Congress towards passing legislation. A Carbon Tax, which has been proposed, faces much debate over the simple fact that it is a tax. In order to pass, a cap and trade needs a sound proposal and support from Congress, the executive administration, and international players. The Waxman-Markey proposal has been supported by the administration, as well as many members of Congress. On Tuesday, April 28th, 2009 Senator Arlin Spector defected to the Democratic Party. This move leaves the White House only 1 vote away from having a filibuster proof advantage in Senate. This "game changing" moment, "could give the White House enough votes to

move ahead on a national health-care program, a proposal to cap carbon emissions and an array of other issues" (WSJ)

The executive administration promises to assume leadership with regards to global warming. Obama has repeatedly supported a cap and trade program as means to curb climate change, "We are going to put in place a cap-and-trade system that controls the amount of greenhouse gases that are going into the atmosphere. ... We've got to be less wasteful, both as a society and in our own individual lives" (WSJ).

Many companies and non-profit organizations support a cap and trade as well. Steve Tripoli, Ceres states, "It's also a climate strategy that's good for business and consumers. By emphasizing energy efficiency and renewable energy this bill provides the least expensive way forward for addressing climate change. It removes market barriers that exist in many states and makes it easier and cheaper for businesses to move toward a clean energy economy. He believes that companies in his coalition want a competitive strategy. Most of all, he says that he supports a cap and trade because a cap and trade promises a cap, meaning it promises that there will be reductions. A carbon tax on the other hand, sets a price but people might continue to just pay for polluting which will not fix anything. Michael Crocker of non-profit organization Greenpeace USA says that, the draft bill is a "good first step in the right direction, but the bill must be strengthened to ensure that it will achieve the goals of transitioning to a clean energy economy and solving global warming."

The European Union, already using a cap and trade, greatly favors the U.S. doing the same. The European Union, whose initial target of reducing emissions was 20

percent by 2020 said that it would cut emissions to about 30 percent if countries such as the United States took measures to reduce emissions by means that are in line with European efforts. European Environment Commissioner Stavros Dimas says, "We welcome the proposed legislation. It is really very encouraging. "This will send a very strong message to Copenhagen and facilitate and agreement in Copenhagen.

Al Gore, an avid environmentalist and strong supporter of a cap and trade program states, "the best way to secure a global agreement that guarantees that other nations will also reduce their global warming pollution is for the U.S. to lead the world in meeting this historic challenge. The United States is the world's leader. We are the only nation in the world that can. Once we find the moral courage to take on this issue, the rest of the world will come along. Now is the time to act before the world gathers in Copenhagen this December to solve the crisis. Not next year, this year."

The United States is ready and will take on Climate Change. A cap and trade system is likely to pass in the United States and could begin as early as 2012.

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